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ORIGINAL ARTICLE

Modified Mini-Abdominoplasty: Navel Transposition and Horizontal Residual Scar

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Abstract The classic mini-abdominoplasty is a surgery generally indicated for cases in which cutaneous laxity of the abdomen's inferior region is associated with adiposity. However, in some cases, the characteristics of the abdomen are such that resort to a traditional mini-abdominoplasty would involve an unsatisfactory final result due to the unavoidable caudalization of the navel. In answer to this problem, Pontes developed the type 4 modified mini-abdominoplasty. This procedure adds to the classic technique a complete resection of the navel and its transposition so that it leaves a residual vertical scar. With our version of the technique, the scar is more aesthetic in shape and appearance, horizontal, and parallel to the suprapubic scar.

Keywords Mini abdominoplasty · Navel transposition · Plastic surgery · Residual scar

Fat accumulation in the abdominal wall is an easily noticeable defect in both the female and the male body. It also is one of the most common indications for surgical dermolipectomy [6]. The approach for such a lipodystrophy must be multidisciplinary. We need to look for pathologies ignored by patients such as diabetes or hypothyroidism. The psychological profile of the patient must be traced, and we must not forget that abdominal obesity, together with hematic cholesterol levels, represents elevated pressure values and the condition of tabagism,

an important parameter for assessing the risk that cardiovascular diseases will develop [4].

The surgical removal of excess fat tissue does not modify, in direct the sense, the aforementioned conditions. However, reestablishment of the patient's structural harmony can influence the patient to modify his or her lifestyle, thereby increasing the patient's sense of well-being in the social or working field [1, 2, 11]. The aims of abdominoplasty, independent of the techniques used, are to

- excise the excess tissue
- reinforce the abdominal wall
- repair eventrations and hernias
- review anesthetic scars
- treat fat accumulations in the near anatomic zones.

The mini-abdominoplasty, generally type 2 according to the classification of Matarasso (Table 1), is performed. This procedure consists of a lipectomy with a somewhat wide suction that extends to the costal margin through a limited suprapubic approach, then is joined to a reduced fusiform resection of skin and subskin. The inferior incision follows the lipectomy.

After an accurate hemostasis is performed, the border flap is moderately tractioned toward the bottom so that the excess tissue can be estimated exactly and removed through a superior incision. The stitch of the subdermic layer through absorbable threads must be particularly accurate, allowing perfect contact of the cutaneous margins so continuous cutaneous sutures can be performed.

The standard mini-abdominoplasty and abdominoplasty have two targets for different patients. The indication for the mini-abdominoplasty is cutaneous and musculofascial laxity of the inferior abdomen in association with excess fat. If, instead, the cutaneous and musculofascial laxity

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Table 1 Matarasso's classification based on the level of cutaneous and muscufascial laxity as well as the quantity of excess fat

<i>Type 1</i>	The patients do not show muscufascial laxity, but manifest a minimum of cutaneous laxity and excess suprapubic fat
<i>Type 2</i>	The patients show a little cutaneous and muscufascial laxity of the inferior abdomen and excess fat
<i>Type 3</i>	The patients show moderate cutaneous and muscufascial laxity of the inferior and superior abdomen with excess fat
<i>Type 4</i>	The patients show serious cutaneous and muscufascial laxity of the inferior and superior abdomen with excess fat

concerns also the superior abdomen, a standard abdominoplasty is advised [3, 5, 7, 8, 10].

In some cases, the characteristics of the abdomen suggest the use of these techniques. In fact, for these patients, resort to a traditional mini-abdominoplasty would involve an unsatisfactory final result due to unavoidable caudalization of the navel. In response to these puzzles, Pontes [9] developed the type 4 modified mini-abdominoplasty. To the traditional technique, the type 4 procedure adds a complete elliptic resection of the navel and its transposition as well as a meticulous skeletization of its pedicle. With this approach, the two flaps are sutured on the median line, leaving the residual navel scar in a vertical orientation. This technique, also returning the navel correctly to its place, generates an unaesthetic scar that often introflects on the median line. To avert this disadvantage, we propose obtaining the aforementioned scar with a more valid final aesthetical result by changing its orientation to one that is horizontal and parallel to the suprapubic scar. The Pontes type 4 mini-abdominoplasty and our solution are compared.

Materials and Methods

The study included 10 women ranging in age from 36 to 44 years. These participants were nonsmokers with no familial or personal history of diseases that could affect the postoperative period who had the same surgical indications. The patients were divided into two groups of five patients each. Group A underwent surgery using the Pontes type 4 mini-abdominoplasty, whereas group B underwent surgery using our variation.

Our solution consists of a mini-abdominoplasty with navel transposition as well as a horizontal residual scar parallel to the suprapubic one and located at the medium point between the position of the neo-navel and the inferior incision. To this point, the navel is replaced in its anatomic center through semi-introfflection of points in nylon 5-0. The navel vitality is supported by its double vascularization. The medication comprises a flock of Xeroform (Tyco Healthcare/Kendall, Mansfield, MA) in the umbilical center and gauze with bacitracina on the wound together with an elastic wrap for 2 weeks. Our technique shows the same indications that Pontes specified for the so-called type 4 abdominoplasty.

On the contrary, in cases for which traditional abdominoplasty is contraindicated because the tissue necessary to

prepare the cover flap is lacking, a mini-abdominoplasty without navel transposition would be insufficient to satisfy the patient's demands. The follow-up evaluation included four clinic controls: the first one 4 days after surgery, the second after 10 days, and the last two after 4 and 8 months.

Results

No patients showed intraoperative or postoperative complications. At the first control, the patients were apyretic, and the clinical control evidenced no anomaly in them. At the second control, we removed the sutures without finding any problems in any patients. At the 4-month control, but before the 8-month control, the patients from group A, who underwent surgery with the Pontes technique, showed a median introfflected scar. The group B patients showed a slight residual umbilical scar with no introfflection or traction.

Discussion and Conclusions

The five patients who underwent surgery using the Pontes technique showed that the residual scar of the old navel vertical type had an aesthetic result much worse than the patients treated with our modified technique. Using the Pontes technique, we found that the residual depression on the median navel pubic line created a disharmony realized also by the patients. On the contrary, our technique generates a small horizontal scar realized only by the patients, thanks to the easy masking of it through intimate clothes, thus avoiding "the scar complex." The aforementioned scar gives a more pleasant appearance to the inferior third of the abdomen, which is less lowered in the center and "softer." Moreover, the scar, parallel to the inferior incision, appears less visible.

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